Date: September 3, 2020

To: Agency Administrators

From: Shane Cherry on behalf of Electron Hydro

Re: Electron Hydro Diversion Repair and Spillway Replacement Project
Puyallup River September and October Daily Flows Above 2,000 cfs for 1985 – 2019

Electron Hydro is developing a request for an extension of the in-water work window to facilitate stabilizing the in-water work at the Diversion Repair and Spillway Replacement Project work site. I reviewed daily flow records for the USGS Gage 12092000 "Puyallup River Near Electron, WA" to identify all days in the months of September and October from 1985 to 2019 (35 years) when daily flow exceeded 2,000 cfs. These data may be used to assess the risk of the temporary bypass channel getting overtopped by river flow. The date and daily flow values for each such event are tabulated below:

Date	Daily Flow
9/30/2013	2,250 cfs
9/30/2005	3,220 cfs
10/1/2000	2,440 cfs
10/16/1988	2,730 cfs
10/21/2003	2,280 cfs
10/22/2017	3,920 cfs
10/30/2009	2,530 cfs
10/30/1997	2,220 cfs
10/31/2015	4,000 cfs
10/31/1994	2,150 cfs

Key observations from these daily flow data are summarized below:

1. For period September 1 to October 31, daily flow exceeded 2000 cfs 10 times in 35 years.
2. Each year that occurred, it only happened on one day within the two-month period.
3. The earliest flow that exceeded 2000 cfs was on September 30 (in both 2005 and 2013).
4. The highest flow of 4,000 cfs occurred on 10/31/2015.
5. Risk is low in September but increases progressively through October with the highest probability of high flows occurring in the last 10 days of October.

These data may be used to assess flow-related risks associated with extending in-water work within this period. Keep in mind that these are average daily flow values. Instantaneous flows fluctuated over a 100 cfs range from high to low each day in late August of this year.

These data may be used to assess the potential for river flow overtopping the temporary bypass channel. The risk of overtopping may be used to inform a decision about the timing for ending in-water work as well as any reasonable measures to mitigate the risk of overtopping including modifications to the temporary bypass channel and cofferdams to function effectively under higher flows.

If you have questions about these data, my observations, or applicability of this information please contact me at either of the numbers below.

Respectfully yours,

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